R E M A R K S

In the Office Action, claims 1, 3, 5, 6, 14-17, 26, 27, 28 and 30 were said to be allowable if rewritten or amended to overcome the rejections under 35 USC 112, second paragraph set forth in the Office Action.

The Examiner's suggestions have been followed in the present amendment of claim 1 meeting the formal rejections under 35 USC 112, the suggestions of the Examiner's are being highly appreciated. The words "washing nozzle" have been replaced by -- washing fluid-- in the fourth paragraph of claim 1 because not a washing nozzle but only a washing fluid is sprayable. Accordingly, the rejections under 35 USC 112 are believed to be overcome so that the foregoing claims (claim 1 and its dependent claims) should be allowable.

Claim 25 was rejected under 35 USC 103(a) as unpatentable over Molari '375 in view of Bray '904 on the grounds set forth in the Office Action.

Claims 25 and 29 were rejected under 35 USC 103(a) as unpatentable over Epple et al '464 in view of Molari '375 and Bray '904 for the reasons stated in the Office Action.

New claims are presented for further definition of the invention, and read on the elected species of Fig. 5 as well as possibly on the embodiments of species shown in other ones of the Figures. Reconsideration of the foregoing rejections is requested in view

of the following argument, which argument is believed to show patentable subject matter also in the new claims.

Epple '464 does not show any combined movement in the longitudinal and transversal direction.

There is not even made a provision by Epple to have a longitudinal movement during the spraying, and the spraying nozzle is only moved into an operating setting before the beginning of the spraying action. Even if one would use a fluidic nozzle in the arrangement according to Epple, then there would be no movement in longitudinal direction during the spraying. Epple teaches use of a fixed position of the nozzle during a spraying of his headlump. Epple '464 as the closest state of the art does not show any movement of the nozzle during the spraying action.

Claims 25 and 31-34 make clear that the movement of the washing arm occurs simultaneously with the spraying of washing fluid during the oscillation of the washing fluid jet. In other words, if the cleaning system is activated, then simultaneously a longitudinal movement of the washing arm occurs together with a transversal movement of the washing fluid jet.

In addition, the direction of oscillation of the fluidic jet is stated in these claims to be essentially transverse to a direction of movement of the washing arm. Thereby, there are two directions of movement of the jet, namely, the movement direction

of the washing arm and the oscillation direction. The two directions of movement of the jet provide for a path of liquid laid down on the shield. If additional nozzles are carried by the washing arm, the transverse orientation of the washing arm insures that the paths of the additional nozzles are parallel to each other for complete coverage of the shield. Such an arrangement is not taught by a combined teachings of the cited art.

Eppele et al '464 disclose a cleaning system in which the washing nozzle first is moved from a rest position into the operation setting (column 2, lines 10-13) and only after the washing nozzle has reached its operating setting, then the cleaning procedure starts. It is clear from Fig. 1 and 2 that a spraying of washing fluid starting already in the resting position makes no sense since the washing fluid jet could not hit the shield of the lamp. It is understood that such a spraying would increase the water consumption without improving the cleaning of the shield.

Merkel et al '051 and Molari '375 disclose cleaning systems with moving washing arms and the washing fluid is sprayed during the movement of the arm. However, both systems comprise washing arms being pivoted around fixed axes and therefore, both cleaning systems cover a segment of a circle only. This means that the washing fluid does not reach the corners of the shield while in other parts the washing fluid reaches the edge of the shield.

Merkel et al further describe a washing arm with an adjustable length and a possibility for rotation about the longitudinal axes

of the arm in order to extend the region covered by the washing fluid. However, it is clear that if one wishes to increase the area covered by the washing fluid with a pivoting washing arm, it makes no sense to use a fluidic nozzle since it is not possible to synchronize the oscillation of the washing fluid jet with the reciprocating swivelling movement of the washing arm.

If a fluidic nozzle would be used together with a swivelling washing arm, then due to the accidental momentary direction of the washing fluid jet, it could happen both that the corners of the shield would not be cleaned and the washing fluid jet in another position of the arm would not be directed onto the shield with the effect of increasing the consumption of the washing fluid and causing stains on the car body.

With respect to independent claim 25. The art teaches use of a stationary fluidic nozzle. The art presumes that moving arms are not required if a moving jet of a fluidic nozzle is employed. Therefore there is no suggestion for a combining of a longitudinal motion of nozzle with transverse jet movement. Accordingly, this argument is believed to overcome the grounds of rejection to show allowable subject matter in the independent claims 25 and 31-34, and dependent claim 29.

In the rejections of claims 25 and 29 the Examiner combines teachings of the three references Epple '464, Molari '375 and Bray '904. However, it is urged that there is no motivation to combine the teachings of these references, and that it may be

inappropriate to combine these teachings, because the teachings are contradictory.

For example, Bray (Fig. 1) shows that by aiming a fluidic nozzle at a glancing angle against a windshield, and by directing a scanning movement of the water jet from side to side across the windshield, one can wash a major part of the windshield without moving the nozzle, the nozzle stays stationary. On the other hand, Molari, who directs water from conventional nozzles directly at the windshield, advocates moving the nozzles along a path determined by a pivoting of a washer arm that carries the nozzles.

Epple provides an articulated rod-shaped carrier for a conventional nozzle, wherein the carrier serves to transport the nozzle between a stowage position and an operating position. The Examiner notes in his rejection (6 lines from the bottom of page 4) that the Epple nozzle could be sprayed --is "sprayable"-- against the head lamp during movement of the carrier. Even if the Examiner's analysis of the Epple device be correct, the fact remains that Epple does not teach spraying during movement of the nozzle, but spraying from a fixed position of the nozzle at a specific location in front of the headlamp. Therefore, the concept of Molari, to move the nozzle during spraying, is contradicted by Epple who teaches a stationary position of the nozzle during spraying.

Also, in the case of Epple, as the nozzle is withdrawn from its operating position, its angulation and location become less

favorable for wetting the headlamp. A carefully controlled spraying and angulation of the nozzle relative to the windshield or headlamp is required during a scanning of the nozzle during oscillation of the water jet for a successful washing. No such scanning of the Epple nozzle is taught, nor is there a suggestion of use of a fluidic nozzle (which has a pancake spray pattern) instead of the conventional nozzle (which has a conical spray pattern).

In view of the foregoing analysis of the teachings of the cited art, it is apparent that their diverse teachings would direct one away from the practice of the present invention. There is no common theme in the cited art of benefit in the spraying technology, whether for washing the window, or for some other purpose such as preventing a fogging of the window, which would motivate someone to use an oscillatory scanning of a washer fluid from a nozzle that is being carried along a path. And wherein the path is displaced from the surface being wetted; and wherein the pattern of the oscillatory scanning is transverse to the path. This argument applies to claim 25 and its dependent claim 29, as well as to the new independent claims 31-33, which are apparatus claims, and the new independent claim 34, which is a method claim. Accordingly all of the claims should be allowable.

In the event there are further issues remaining the Examiner is respectfully requested to telephone attorney to reach agreement to expedite issuance of this application.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached pages are captioned "Version with markings to show changes made"

Since the present claims set forth the present invention patentably and distinctly, and are not taught by the cited art either taken alone or in combination, this amendment is now believed to place this case in condition for allowance and the Examiner is respectfully requested to reconsider the matter, enter this amendment, and to allow all of the claims in this case.

Respectfully submitted,

Joachim Bandemer, et al

by: _____
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CERTIFICATE OF MAILING UNDER 37 CFR SECTION 1.8(a)

I hereby certify that the accompanying Amendment Pursuant to Request for Continued Examination (RCE), is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Commissioner of Patents & Trademarks, Washington, D.C. 20231, on March 4, 2003.

Dated: March 4, 2003

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Request for Continued Examination (RCE) in:
USA PCT National Stage Patent Application
PCT/EP97/05478 filed October 6, 1997
Joachim Bandemer, et al
Serial No.: 09/308,314
USA Filing Date: May 13, 1999
SHIELD CLEANING SYSTEM, OPERATING SOLELY
BY SPRAYING WITH WASHING FLUID
(CPA filed January 22, 2002)
Examiner: Gary K. Graham
Group art unit: 1744

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Please amend claim 1 as follows:

1. (five times amended) A shield cleaning system, operating by spraying with washing fluid, for shields of an automobile, comprising:

a motor, and a washing arm movable over and at a distance from the shield by said motor, and a push rod interconnecting the motor with the washing arm for [displaying] displacing the washing arm in a longitudinal direction of the push rod, the washing arm extending transversely of the direction [or] of longitudinal displacement;

at least one fluidic washing nozzle arranged on the washing arm for spraying washing fluid onto the shield;

wherein the washing nozzle is movable by the washing arm over a region of the shield which is to be cleaned, wherein the washing nozzle has an outlet opening facing said shield, and the washing [nozzle] fluid is sprayable on at least portions of the shield immediately during movement of the washing arm from a basic position of the washing arm; and

wherein the fluidic washing nozzle has a washing fluid jet oscillating essentially transversely to the direction of movement of the washing arm, and a shape of the push rod corresponds to a contour of the shield.